

Everything in Mineral, Agriculture and Horticulture

MINING INDUSTRY

No state in the Union has so many diversified interests as has Utah. There is everything in Utah in the way of mineral, the precious metals as well as the base. Eastern people look upon Utah as a mining state exclusively, but they have no conception of what those mining interests are, what the product is, what the dividends aggregate, which are the producing mines, and where they are. A story about Utah's mineral wealth would fill a volume. Millions upon millions of dollars have been paid in dividends. The mountain ranges are filled with mineral.

Silver-lode properties are in Alta, American Fork, Big Cottonwood, Park City, Tintic and Stockton districts; gold in the Marysville and Mercur districts; copper in Bingham and Beaver districts, Bingham being the third greatest copper camp in the world. Davenport Creek district carries all kind of mineral. Davenport Creek district carries the first half of this year's production of silver to the amount of \$3,926,145. The indications now point to the amount for the year exceeding \$8,000,000.

Including the present year, Utah will have paid in dividends to shareholders in its mining properties since the industry was started in the state, ninety millions of dollars.

The average annual output of the metal mines of Utah for the three years, 1906-7-8, was \$40,000,000; this year indicates a much larger output. Here is the average output for the years named:

Gold, 430,656 ounces, value, \$9,091,550

Silver, 14,161,295 ounces, value, \$2,999,316

Copper, 57,463,134 pounds, value, 10,003,168

Lead, 129,292,350 pounds, value, 6,173,752

Quicksilver, 825 flasks, value, 352,500

There are a number of dividend payers in Utah. Here is the list, with the amount of dividends paid to July 15, 1909. They tell a wonderful story of what the great mountain ranges in Utah yield:

UTAH DIVIDEND PAYERS.

Stock.	Current Dividends.	Paid Since Jan. 1, 1909.	Total Paid Jan. 1, 1909.
Blackfoot, Ida., July 12.			
Are the Black Hawk veterans entitled to the same rates on the railroads as the G. A. R. in the coming fall?			
A BLACK HAWK VETERAN.			
Yes, the rate is available to all of them.			
Stockton, Utah, July 15.			
Will you kindly put a list of the battleships, cruisers, torpedo boats and			
torpedo-boat destroyers in the United States navy in your Sunday issue of The Tribune?			
JAS. G. BROWN.			
We haven't the space for 25 cents you can get from any bookstore or an almanac that will give you the complete list, covering several pages. Or, write to either of our Senators or Representative, and you should get it free.			
Eureka, July 21.			
A bet that the Nile river is longer than the Mississippi. E bet that the Mississippi is longer than the Nile without the tributaries.			
Lippincott's Gazetteer gives the Mississippi to the headwaters of the Missouri, a length of 4200 miles; the Nile, a length of 4100 miles. The Nile is longer than the Mississippi.			
Garfield, July 21.			
Is a man a citizen of the United States without taking out naturalization papers, born in the United States, father an Englishman and mother a German? SUBSCRIBER			
Yes.			
Sublet, Ida., June 12.			
Will you kindly tell me, through Tribune columns—(1) How did the world's navies rank at the beginning of the Philippine war? (2) How do they rank now? (3) Which was the greater at the beginning of the Russo-Japanese war, the Russian navy or the Japanese navy? W. S. POWERS.			
(1) British, French, Italian, German, Japanese, Russian, United States, Spain. (2) British, French, United States, Germany, Japan, with a possibility that Japan should be placed third instead of fifth, for nobody outside of Japan's officialdom knows just what Japan's navy is. (3) The Japanese.			
Park City, Utah, July 14.			
(1) What grade certificate does a teacher have to take to teach school? (2) Is there a state superintendent of public instruction who gives teachers certificates, or does the county superintendent do that himself? (3) What are teachers' wages? F. B. C.			
(1) Third grade. (2) State Superintendent A. C. Nelson can inform you about state certificates; the county superintendent gives certificates on qualifications proved, to teach in the district schools. (3) Teachers' wages vary from \$30 to \$40 a month to three or four times that sum.			
Salt Lake City, July 10.			
Will you kindly publish in your Questions and Answers department the names of President Elliott's five feet of books? M. B.			
We do not care to do so, as it was an advertising scheme altogether, as Dr. Eliot explains. A publishing house asked him to get up a "five-foot shelf"			

STONE AND MARBLE

No state in the union has a greater variety of building stone than has Utah, and the quantity is inexhaustible. Within ten miles of Salt Lake are quarries of red and white sandstone of the finest quality, and which has no equal anywhere. There are mountains of granite and of limestone. Onyx, which cannot be equalled for beauty and color is found in seven of the counties; there is marble in various colors and at Peleian Point, on Utah Lake, a quarry of black marble has just been opened up which is of the finest quality and grade to be found in the world. State of high grade is also found.

CEMENT INDUSTRY

Utah has two plants for the manufacture of cement, one in Salt Lake City, the other in Weber canyon. The output from these plants this year will aggregate 630,000 barrels, and the industry gives employment to 250 persons. The demand for this product is extraordinary. There are a number of buildings in Salt Lake built of reinforced concrete. The Tribune mechanical department occupies the first concrete building constructed in the west, and the first absolutely fireproof building ever erected in Salt Lake City. It might be mentioned that the manufacture of cement in the United States in 1907, the last available figures on the subject, was 16,000,000 barrels, and this was sixteen million barrels short of the demand for that year.

GYPSUM DEPOSITS

Imagine a bed of gypsum one mile thick and 800 feet wide, and this will give you an idea of the land plaster fields of Utah. For this one bed is being worked. It is located in Juab county, near Nephi. This one deposit, if there were no others in the state, is enough to supply the world for ages.

IRON INDUSTRY

In Washington and San Juan counties are the developed iron fields of the state. In the first named county, near Virgin City, the first well was sunk in 1907. This well is producing about forty barrels of iron ore per day. The field is being opened and several wells are now being bored. In Grand county, near Bluffs, two wells have been bored, one of which has proved to be a gusher. Oil experts declare that southern Utah will be one of the greatest of iron fields.

CLAY PRODUCTS

Four years ago Utah ranked thirty-fifth in the list of states by value of clay products; the product of 1905 amounting to \$422,691. There were forty-five establishments here, with a capital of \$550,000 invested, having an average number of employees of 325. Now there is a million dollars invested and the output this year of 1909 will exceed a million dollars. The clay products include brick, fire brick and pipe. The brick is produced in the state, and the pipe is made in the clay from which pottery is made. Experiments and tests made with this clay show that the finest of white pottery can be produced.

SMELTING INDUSTRY

The greatest smelting center in the world is the Salt Lake valley. There are four great smelters in operation in the valley—one at Bingham, near the mouth of Bingham canyon, which is so near the valley that it can be called in the valley. Of the three in that it can be called in the valley. The American Smelting and Refining company, at Bingham Junction, with a capacity of 1000 tons per day; the American Smelting and Refining company, at Garfield, with a capacity of 4000 tons per day; the Yuma, at Bingham, with a capacity of 1000 tons per day; and the Utah Copper company, at Bingham, with a capacity of 1000 tons per day. In addition to these, the Utah Copper and the Boston Consolidated have concentrating plants at Garfield, with a daily capacity of 9000 tons, and the Copperton plant at Bingham, of 1000 tons daily. In Tooele the International Smelting company is constructing a plant with an initial capacity of 2000 tons daily, which will be increased to 6000 to 10,000 tons daily. There is also a smelter at Eureka, the Tintic Smelting company, with a daily capacity of 1100 tons; the Majestic plant, in Beaver county, capacity 500 tons daily; and the smelter at Ogden, with a capacity of 500 tons daily. At Park City there are four concentrating plants, with a daily capacity of 1400 tons; at Mercur there are two mills in operation, with a daily capacity of 1200 tons, with a smelter plant attachment. In the Cactus district, at Newhouse, is a concentrating mill with a daily capacity of 1200 tons daily. At Lark, in the west mountain district, is a mill

with a daily capacity of 2500 tons, and the Utah Apex with a concentrating plant of 500 tons daily. Besides these there are a number of smaller mills throughout the state.

In thirty-one years of metal mining, that is, from January 1, 1877, to December 31, 1908, Utah has produced in precious metals \$410,218,397, as follows:

Gold	\$ 61,856,614
Silver	196,470,937
Lead	79,682,427
Copper	72,208,317

Total \$410,218,397

In the metal mines of the state an army of men is at work, viz:

Park City district	2,000
Tintic district	1,000
Beaver county district	1,500
Bingham	5,000
Salt Lake company smelters	5,000
Deep Creek district	300
Alta district	200
Total	18,000

The discovery in the Bingham district of porphyry deposits, an innovation in mining has been inaugurated to meet existing conditions, steam-shovel system has been applied which has resulted in the removal of mountains and the most profitable mining in the west, the installation of the more modern mills and furnaces in the world and the calling to Utah of the most eminent metallurgists in the world.

In the baser metals the iron deposits of Utah are the greatest in the world; there are mountains of iron, and of astounding purity. The county of Iron is a veritable body of iron, and with large deposits of coal in close proximity, will make it not only the greatest in the world and the calling to Utah of the most eminent metallurgists in the world.

Two hundred different classes or kinds of minerals are found in Utah. The more valuable are:

Agate.	Jet.
Alabaster.	Kaolinite, or porcelain clay.
Alum, in varieties.	Lignite, in varieties.
Amphibol, in varieties.	Limonite, in iron ore.
Anglesite, or lead sulphate.	Magnetite.
Antimony.	Malachite, or white pyrites.
Argentiferous Galena.	Margarite, or white ruby silver.
Argenteite, or sulphide of silver.	Mineral Wax.
Arsenic.	Moss Agate.
Atacamite, or chloride of copper.	Muscovite, or white mica.
Azurite, or copper carbonate.	Nitro, or saltpeter.
Basalt.	Nitro Calcite.
Bismuth.	Nitro Glauberite.
Bitumen.	Onyx, in varieties.
Blue Vitriol.	Opal, in varieties.
Bog Iron Ore.	Opalized Wood.
Bole, in varieties.	Pickeringite, or magnesia.
Bornite, or purple copper.	Prase, or green quartz.
Boschite, or manganese ore.	Pyrites, in varieties.
Calamine, or zinc silicate.	Pyrochroite, or manganese ore.
Calcite, in varieties.	Pyromorphite, or lead phosphate.
Cerargyrite, or silver chloride.	Pyrozyne, in varieties.
Cerussite, or lead carbonate.	Rose Quartz.
Chalcantite, or copper sulphate.	Smithsonite, or zinc carbonate.
Chrysocolla, or copper silicate.	Smoky Quartz.
Coal (gittie and bituminous).	Soapstone, in varieties.
Copper (native).	Selenite, or transparent gypsum.
Cuprite, or red copper ore.	Silicious Sinter.
Embolite, or chlor-bromid silver.	Silver (native).
Feldspar, in varieties.	Soda, carbonate.
Freibergite, or gray silver ore.	Specter Iron.
Galena, in varieties.	Stephanite, or black brittle silver ore.
Garnet, in varieties.	Sulphide of Silver.
Gilsonite (Uintalite).	Sulphur, in varieties.
Gold (native).	Talcite, in varieties.
Gray copper ore.	Tetradrite, or gray copper ore.
Horn Silver, or cyanide.	Tin, in varieties.
Hydrocuprite, or copper ore.	Tin, white, yellow or blue.
Iron Ochres.	Tin, in varieties.
Iron Pyrites.	Vitriolous Copper Ore.
Iron Vitriol.	Volcanic Glass.
Jasper, in varieties.	Wad, manganese ore.
	Wulfenite, or molybdate of lead.

IRRIGATION

Utah was the pioneer state in irrigation; 351 canals for irrigating purposes have been constructed. To maintain an acre of land costs 30 cents per acre per annum. The cost of the irrigating canals is approximately \$4,000,000, and they irrigate about 650,000 acres.

There is one government project in the state—the Strawberry Valley, which when completed will irrigate 60,000 acres of mesa and bottom land in Utah county. The reservoir will impound 110,000 acre-feet of water. This water will be carried through a tunnel 18,000 feet long with a capacity of 500 second-feet. The cost will be \$1,000,000.

The Hatchtown reservoir, with a diverting dam and canal, has been constructed in Garfield county, the work being completed this year. It has been built under the direction of the state land board and will irrigate 6000 acres. The cost was \$126,900.

Another project under the direction of the state board is the Piute project, near Marysville, which will irrigate 20,000 acres. Its cost, when completed, will be about \$450,000. It will not be finished for two years.

The Price river project, which will irrigate 20,000 acres of land.

The Oasis Irrigated Lands Company project, which will irrigate 43,000 acres, are enterprises completed and under way by private capital.

It might be mentioned in connection with this that the first National Irrigation congress was held in Salt Lake City in 1892, at which congress agitation was started which ultimately resulted in the action of congress which has brought about the great governmental irrigation projects.

When one looks at the returns of the harvest of grain in Utah, 75 per cent of which is raised upon dry land; when he considers that this crop returned in the year 1908 to Utah farmers the sum of eight million dollars, he will realize that dry farming is a fact, not a theory. In aiding this industry Utah maintains six experimental stations, and once each year sends out experts from the Agricultural college to instruct farmers in this way of caring for arid farms. Twenty-five million acres of land in Utah can be reclaimed by arid or dry farming.

UTAH

Utah has an area in square miles of 84,990. Total acreage in state 54,393,800. Extreme breadth, miles 275. Extreme length, miles 345. Land surface of state in square miles is 82,184. Land surface of state in acres is 52,597,760. Water surface of state in square miles is 2,806. Water surface of state in acres is 1,795,840.

Is the eighth largest state in the Union.

Was admitted to the Union January 4, 1896.

The New England states can be cut out of Utah and still have enough land to make the states of New Jersey and Maryland.

State flower is the sego lily.

Population, estimated 840,000.

Number of families in state 75,000.

State rank according to population 43.

Two-thirds of the population are engaged in agriculture.

Forest reserves in the state cover 7,436,327 acres.

The revenue to the state from these reserves for the year ending June 30, 1909, was \$32,681.49.

Horticultural products in 1908, worth \$1,700,000.

Grain crop 8,000,000.

Dairy products 2,200,000.

Poultry and eggs 650,000.

Sugar beets 1,900,000.

Wool 2,520,000.

Sheep number 3,115,000, worth 10,000,000.

Livestock industry 17,936,000.

Assessed valuation for 1909, approximately 175,000,000.

SCHOOL SYSTEM—

Utah spent in 1908 the sum of \$2,329,965.

This is \$23.62 per capita.

The value of school property in the state is \$4,785,417.34.

School attendance is \$1,535, while the school population is 98,660.

The expenditures for the public schools during the twelve years last past, that is, since 1896, when Utah became a state, were \$1,429,010.62; the school attendance has increased 11,585, almost 1000 per year; school population has increased 19,267, or 1600 per year; the

valuation of school property has increased \$3,398,565.89, over \$283,214 per year.

Forty-eight new school houses were erected in 1907-1908, costing \$709,152.95. During eight years last past school houses erected cost \$1,736,403.23.

High schools of the state give from one to five years course of instruction, and have 2343 students enrolled. In the higher institutions of learning is the University of Utah (the value of the university property is \$1,000,000), at Salt Lake; the state normal school at Cedar City; the state school of mines, in Salt Lake; the Agricultural college at Logan.

Text books are furnished free by the state; the average cost per pupil is 76 cents.

There is a uniform state course of study.

According to the census of 1900 Utah has 3.1 illiterates in every hundred of population.

This statistical table for the biennium beginning July 1, 1906, and ending June 30, 1908, tell the story in brief of the common school system of Utah:

	1906-7	1907-8
Number of school districts	293	293
Number of schools	662	662
Number of superintendents	31	31
Number of male teachers	54	54
Number of female teachers	1,562	1,562
Total number of teachers	2,106	2,106
Number of pupils in the		
board members	979	979
Average salary of male teachers per month	\$50.03	\$50.03
Average salary of female teachers per month	\$53.61	\$53.61
Average length of school term in months	7.4	7.4
Number of pupils in state	95,803	95,803
Number of pupils enrolled	79,978	81,535
Average number of pupils in daily attendance	61,132	66,485
Number of pupils in the first grade	8,612	9,757
Number of pupils in the eighth grade	4,951	4,992
Number of eighth grade graduates	2,995	3,130
Number of high schools	31	33
Number of high school graduates	304	326
Average cost of books per pupil	.70	.76
Amount of state appropriation	\$ 459,854.40	\$ 505,139.20
Amount of county tax for schools	296,789.52	365,752.97
Amount of local tax	723,823.08	859,422.68
From other sources	701,020.20	609,791.69
Balance on hand from last report	262,219.32	293,501.08
County superintendent's salary	13,760.05	10,084.60
Total receipts	2,477,466.67	2,633,692.14
Expenditures—		
Teachers' wages	1,032,802.07	1,085,540.87
Text books	69,740.79	75,688.02
County superintendent's salary	13,760.05	10,084.60
Amount paid on new school houses	289,087.44	299,591.94
Amount paid school trustees	26,977.69	35,158.58
All other contingent expenses	741,597.60	823,601.98
Total expenditures	2,183,965.64	2,329,965.97

CORPORATIONS

Corporations are assessed. The property of corporations in Utah is assessed at \$38,973,928.87. This valuation, fixed by the state board of equalization, is:

Railroad companies	\$26,374,037.09
Telephone companies	1,520,555.00
Telegraph companies	283,600.00
Light and power companies	3,180,211.00
Express companies	143,561.00
Canal companies	102,165.00
Private car companies	320,437.00
Mining machinery and improvements	2,743,255.00
Net proceeds of mines	4,297,127.67
Total	\$38,973,928.87

CHURCHES

While the Latter-day Saints have the largest number of churches and the largest following in the state, other denominations are represented.

The Catholics have twelve churches.

The Presbyterians, the oldest denomination in the state, has in the synod of Utah sixty churches, sixty ministers and 3500 communicants.

Protestant Episcopal church has fourteen missions and churches.

Methodist Episcopal church has numerous churches and missions.

Other denominations have buildings and missions throughout the state.

Judge and Mrs. George G. Armstrong, Mr. and Mrs. A. Prof. W. the M. McGovery, Wey and Yates, and Dr. Felts.

Hear Prof. Charles Kent, Cambrian day, Saltair, Thursday, July 29.

Flouting at Saltair—it's great.

QUESTIONS AND ANSWERS

Blackfoot, Ida., July 12.

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